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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,404	11/27/2001	Mark P. Bendett	1014.010US3	2553

21186 7590 03/18/2004

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EXAMINER

MOONEY, MICHAEL P

ART UNIT PAPER NUMBER

2877

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/995,404

Applicant(s)

BENDETT, MARK P.

Examiner

Michael P. Mooney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 39-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 39-49 and 51-57 is/are rejected.
- 7) ☒ Claim(s) 50,58 and 59 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 39-43, 47-49 are rejected under 35 U.S.C. 102b as being anticipated by Arima et al. (5381262).**

Arima et al. teaches an integrated photonic apparatus comprising: a glass substrate having a major surface; an input-signal waveguide formed along the major surface of the substrate; a drop signal waveguide, optically coupled to the input waveguide, and formed along the major surface of the substrate; and pump-light means for controlling an amount of light of a drop-signal wavelength that is output from the drop-signal waveguide. (figs. 1, 4; col. 2 lines 50-60; col. 4 lines 30-37).

Thus claim 39 is met.

Arima et al. teaches the apparatus of claim 39, further comprising reflector means formed on at least one of the input waveguide and an output waveguide for reflecting a first wavelength and passing a plurality of other wavelengths, such that the first wavelength is passed to the drop waveguide and the plurality of other wavelengths is passed through to an exit interface of the output waveguide.

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(figs. 1, 4; col. 2 lines 50-60; col. 3 lines 15-20; col. 4 lines 25-37; col. 5 lines 32-60). Thus claim 40 is met.

Arima et al. teaches an integrated photonic apparatus comprising: a glass substrate having a major surface; an input signal waveguide formed along the major surface of the substrate; an output signal waveguide, optically coupled to the input waveguide, and formed along the major surface of the substrate; a drop signal waveguide, optically coupled to the input waveguide, and formed along the major surface of the substrate; and a first pump-light interface optically coupled to at least one of the input, the drop, and the output waveguides, at least one of the waveguides having a sufficiently high doping level such that only when sufficient pump light is launched into the first pump light interface is significant light of a drop-signal wavelength is output from the drop-signal waveguide. (figs. 1, 4; col. 2 lines 50-60; col. 3 lines 15-20; col. 4 lines 25-37; col. 5 lines 32-60). Thus claim 41 is met.

Arima et al. teaches the apparatus of claim 41, further comprising a first reflector formed on at least one of the input and the output waveguides, wherein the first reflector reflects a first wavelength and is transparent to a plurality of other wavelengths, such that the first wavelength is passed to the drop waveguide and the plurality of other wavelengths is passed through to an exit interface of the output waveguide. (figs. 1, 4; col. 2 lines 50-60; col. 3 lines 15-20; col. 4 lines 25-37; col. 5 lines 32-60). Thus claim 42 is met.

Arima et al. teaches the apparatus of claim 41, further comprising: a first electro-optic reflector formed on at least one of the input and the output waveguides, wherein the first electro-optic reflector selectably reflects a first wavelength and is transparent to a plurality of other wavelengths such that the first wavelength is passed to the drop waveguide and the plurality of other wavelengths is passed through to an exit interface of the output waveguide when the first electro-optic reflector is turned on. (figs. 1, 4; col. 2 lines 50-60; col. 3 lines 15-20; col. 4 lines 25-37; col. 5 lines 32-60). Thus claim 43 is met.

Arima et al. teaches the apparatus of claim 41, further comprising: an add signal waveguide, optically coupled to the output waveguide, and formed along the major surface of the substrate. (figs. 1, 4; col. 2 lines 50-60; col. 3 lines 15-20; col. 4 lines 25-37; col. 5 lines 32-60). Thus claim 47 is met.

Arima et al. teaches the apparatus of claim 41, further comprising: a first electro-optic reflector formed on the output waveguide, wherein the first electro-optic reflector selectably reflects a first wavelength and is transparent to a plurality of other wavelengths such that the first wavelength is passed to the drop waveguide and the plurality of other wavelengths is passed through to an exit interface of the output waveguide when the first electro-optic reflector is turned on, and wherein the first pump-light interface is optically coupled to the drop waveguide, the glass substrate having a doping level such that when sufficient

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pump light is launched into the first pump light interface, light of the drop-signal wavelength is output from the drop-signal waveguide. (figs. 1, 4; col. 2 lines 50-60; col. 3 lines 15-20; col. 4 lines 25-37; col. 5 lines 32-60). Thus claim 48 is met.

Arima et al. teaches the apparatus of claim 48, further comprising: an add signal waveguide, optically coupled to the output waveguide, and formed along the major surface of the substrate, wherein the add waveguide has a higher index of refraction than an index of refraction of adjacent portions of the substrate; and a second pump-light interface optically coupled to the add waveguide, the glass substrate having a doping level such that only when sufficient pump light is launched into the second pump light interface, light of a add-signal wavelength is output from the output waveguide. (figs. 1, 4; col. 2 lines 50-60; col. 3 lines 15-20; col. 4 lines 25-37; col. 5 lines 32-60). Thus claim 49 is met.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 44-46, 51-57 are rejected under 35 U.S.C. 103a as being unpatentable over Arima et al. (5381262).**

Arima et al. teaches an integrated photonic apparatus comprising: a glass substrate having a major surface; an input signal waveguide formed along the major surface of the substrate; an output signal waveguide, optically coupled to the input waveguide, and formed along the major surface of the substrate; a drop signal waveguide, optically coupled to the input waveguide, and formed along the major surface of the substrate; and a first pump-light interface optically coupled to at least one of the input, the drop, and the output waveguides, at least one of the waveguides having a sufficiently high doping level such that only when sufficient pump light is launched into the first pump light interface is significant light of a drop-signal wavelength is output from the drop-signal waveguide. (figs. 1, 4; col. 2 lines 50-60; col. 3 lines 15-20; col. 4 lines 25-37; col. 5 lines 32-60).

Arima et al. teaches the apparatus of claim 41, further comprising: a first electro-optic reflector formed on at least one of the input and the output waveguides, wherein the first electro-optic reflector selectably reflects a first

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wavelength and is transparent to a plurality of other wavelengths such that the first wavelength is passed to the drop waveguide and the plurality of other wavelengths is passed through to an exit interface of the output waveguide when the first electro-optic reflector is turned on. (figs. 1, 4; col. 2 lines 50-60; col. 3 lines 15-20; col. 4 lines 25-37; col. 5 lines 32-60).

Arima et al. teaches reflecting films 21,22. (col. 5 lines 32-35). Although Arima et al. does not explicitly teach “reflector comprises a physical grating having an electro-optic material coating that selectably matches or mismatches an index of refraction of the grating, wherein the first wavelength is reflected when the electro-optic material coating mismatches the index of refraction of the grating” it would have been obvious to do so because it is notoriously well known (NWK) for “reflecting films” to comprise a physical grating having an electro-optic material coating that selectably matches or mismatches an index of refraction of the grating, wherein the first wavelength is reflected when the electro-optic material coating mismatches the index of refraction of the grating. Thus claims 44-45 are rejected.

Furthermore, it is also NWK for the reflector comprise a plurality of dielectric layers of an electro-optic material coating each of which selectably change an index of refraction, thus changing a wavelength that is reflected. Thus claim 46 is rejected.



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By the reasoning and references given above each and every element of claims 51-57 is rendered as obvious in light of Arima et al. and therefore unpatentable over Arima et al. Thus claims 51-57 are rejected. Furthermore, if Applicant disagrees with this obviousness holding, then Applicant should submit evidence showing this obviousness holding is errant. Examiner will then consider restricting.

### ***Allowable Subject Matter***

Claims 50, 58-59 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Mooney whose telephone number is 571-272-2422. The examiner can normally be reached during weekdays, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Any inquiry of a general nature or relating to the status of this application  
or proceeding should be directed to the receptionist whose telephone number is

571-272-1562.

  
Michael P. Mooney  
Examiner  
Art Unit 2877

  
Frank G. Font  
Supervisory Patent Examiner  
Art Unit 2877

FGF/mpm  
3/6/04